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Controlling Cattle Grubs and Lice

Grubs

Lice

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Controlling Cattle Grubs and Lice

CATTLEMEN have known for a long time of the problem presented by cattle grubs also called warbles or "wolves." The familiar bumps on the backs of cattle mark the locations of these larvae beneath the skin. Their presence is accompanied by irritation, reduced milk flow and slower gains in weight.

Unique Life History

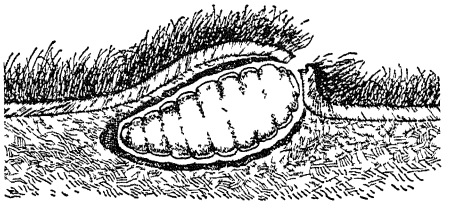
Eggs attached to a hair.

Each larva spends 8 or 9 months traveling through the body of the animal. Hatching from an egg deposited on the hair of the heel, belly or escutcheon, the larva travels through the muscular tissues to the abdominal and chest cavities in about 2½ months. At the end of that time, many larvae are attached to the gullet.

When the larvae reach the proper stage of growth, they travel through muscular tissues to the back of the animal and form a cyst just beneath the skin. In Ohio, the first of the larvae reach the back usually in January. The number located on the animal's back increases during the next 2 months.

Sometime after arriving at the back, the larvae cut holes through the animal's skin. They breath through the holes. Here the larvae remain stationary and growing for 6 to 8 weeks.

During the spring months, larvae leave the back through holes cut in the skin of the host and fall to the ground. The larvae pupate in the soil of a pasture field or open lot. After spending 2 to 4 weeks an inch or 2 beneath the soil, the adult heel flies, or ox-warble flies, emerge to lay eggs for the next generation. There is only one generation each year.



The position of the cattle grub beneath the skin. (About natural size.)

The heel flies appear in greatest numbers from early May to July. Some may be on the wing and laying eggs late into the summer. The flies, attempting to lay eggs on the cattle, produce a buzzing sound. This buzzing causes cattle to stampede. With tails in the air, they break for shelter of the barn, stream, pond or shade trees. Cattle remain in shelter for hours, refusing to feed on pasture.

The adult heel flies are about ½ inch long, dark gray or black, with marking of light yellow hairs across the abdomen. They cannot sting but are intent only on laying eggs principally on the hairs of the legs or heels of cattle.

This they do during the warm, sunny part of the day. The flies are associated with open pasture land from which they emerge and attack cattle. Some cattle are annoyed by the flies more than others. Young stock usually become the most heavily infested.

Heavy Losses

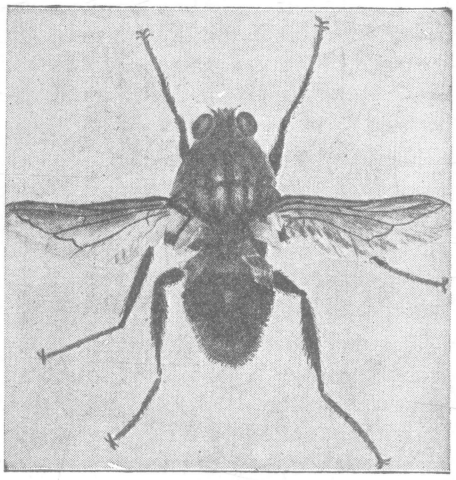
Losses caused by the cattle grubs and the adult flies occur in several ways. The total loss amounts to an almost unbelievable sum. The manner in which the losses occur are:

1. Heel flies frighten cattle each spring and summer for 3 to 4 months. Loss in milk flow, or poor gains or even loss in body weight may result from the lowered intake of feed while the cattle are in shelter.

2. Young larvae penetrate the skin and attack animal tissue over a period of 8 months. Grub-infested animals sustain an average meat loss of 2 pounds per carcass due to trimming to remove discolored tissue. In this way 12 million pounds of meat are thrown away annually.

3. The perforation of the skin on the back reduces value of hides. At a large Cleveland, Ohio, packing company 20 percent of the native cattle slaughtered from July to October and between 50 and 60 percent of those slaughtered in March had to be discounted because of 5 or more grub holes in the hides.

4. Inflamation and pain caused by grubs in the animals' bodies reduce milk flow and weight gains.



The heel fly, or ox-warble fly, the adult of the cattle grub or ox-warble (greatly enlarged).

These losses in the United States amount to between $50,000,000 and $100,000,000 annually. Ohio cattle are not as seriously infested by warbles as are cattle in the western states.

Control Methods

Methods of control, which are effective and inexpensive, consist of scrubbing or rubbing particles of rotenone into the grub holes on the backs of the animals.

Scrubbing.—The wash used consists of 12 ounces of finely ground derris or cube dust (5 percent rotenone content); 4 ounces neutral soap flakes, or granules; and 1 gallon of soft warm water.

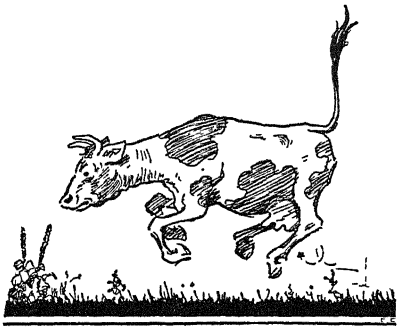
This formula is sufficient to treat 12 to 16 adult cattle, depending upon the length of hair. Use about 1 pint for the average cow.

Mixing Directions.—Heat 1 quart of soft water to near boiling, add the soap and stir. When the soap dissolves, add 12 ounces of derris powder and stir into a smooth paste. Add the remainder of the water (3 quarts) and stir. The mixture is then ready to be applied.

Application Method.—Place the liquid in quart fruit jars which have lids well perforated with holes made with a 6-penny nail. Douse the liquid on the backs of the animals and scrub the back with a stiff-bristled brush. The liquid may be poured or sprayed on the back of the animal. Be sure to agitate the solution as applied to get even distribution of the derris powder.

Brush vigorously to distribute the material and get it in contact with the skin. Continued rubbing may be necessary to wet all the warble "bumps" and penetrate the opening in the hide. The brush should not be made of wire as this may injure the skin. Clean the brush often as it becomes matted with hair.

It is wasteful to apply so much liquid that it runs off. It is important to apply all that will stay in the hair. It may be necessary to rub the liquid in by hand where the hair is extremely thick. It is not necessary to squeeze the grubs out.



The buzzing of heel flies frightens the cattle.

Dry Method.—The dust used consists of a mixture of: 1 part by weight of 5 percent ground derris, or cube root, and 2 parts by weight of finely ground pyrophyllite (Pyrax ABB). Three pounds of this mixture will treat 20 to 25 cattle.

The dust is applied from a shaker-top can having ¼ inch holes, and gently rubbed over the bumps in a rotary motion with the finger-tips.

There are on the market commercial preparations of this material for grub control. The manufacturers' directions should be followed.

The *dust* treatment is satisfactory only on cattle with short hair. It is no better than the wash on such animals, but preferred where cattle must be treated outside in cold weather when water would chill them.

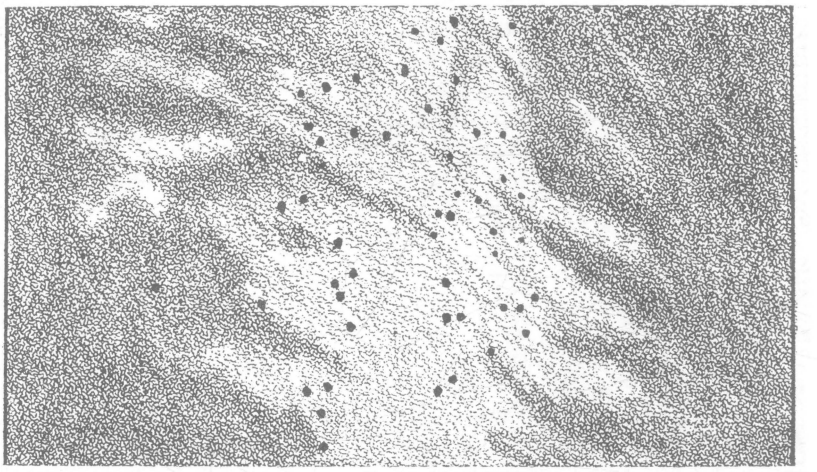
Time of Applications.—Three treatments at monthly intervals are necessary, as the grubs keep appearing in the backs of the animals over a period of 2 to 3 months. The grubs usually appear on the backs by late January. The first application should be made within 2 weeks after the first bumps can be felt by running the hand over the backs of the animals. The second and third applications should follow at about 30-day intervals. The cattle should be checked 30 days following the third treatment, and if any live grubs are found, a fourth application should be made. It is not advisable to treat the cattle on a very cold day unless they are stabled, as it takes an hour or more for the backs to dry and the water would chill the animals.

Effect of Treatment.—The grub is killed within a short time after treatment with the derris or cube, and the grub's body is slowly absorbed. Healing proceeds rapidly. By 2 or 3 weeks following application of the derris or cube treatment, only a small scab can be found over each of the grub breathing holes.

Cost of Materials.—Derris or cube powder, containing 5 percent rotenone, can be purchased for approximately 50 cents per pound. Therefore, 1 gallon of the mixture should cost between 35 cents and 45 cents. The cost of materials per application averages about 5 cents per head. Derris or cube powder can be secured from the larger horticultural supply and insecticide dealers.

Extractions by Hand.—Some cattlemen extract the live grubs by pressing them out of the opening which the grub has cut in the hide. This is fairly successful, but may result in breaking the skin of the larva in its cell, allowing the contents to escape in the muscular tissue. Following this, inflammation and abscess may develop.

The treatment with the derris or cube wash or powder does not endanger the animal and is the safest procedure to follow in dealing with this pest. Considering the gross annual losses caused by this insect, few practices will give such high return for the materials and labor invested as the control of cattle grubs.



Section from back of cattle hide, perforated by cattle grubs. Warbles in the backs of both beef and dairy cattle do their damage in the most valuable part of the hide. These injuries to beef and dairy cattle take a toll from farmers and cattlemen that runs into millions of dollars. Treating for warbles will reduce this loss.

Treatment for Cattle Lice

In many herds, the problem of cattle lice exceeds that of grubs during the winter and early spring months. New insecticides now make it easy to keep cattle free from lice. This is done by applying a spray over the entire body of the animal, or by thoroughly rubbing the insecticide powder into the hair.

Spraying is more effective than dusting. The animals can be sprayed in stalls at any time or in outdoor pens when the weather is *not* too cold to chill the animals.

Treatment for *lice* should begin in *November,* or *early in December.* The treatment must be *repeated in 15 days* to get a complete clean up of the lice.

Here are 4 formulas for spraying: ½ pound of methoxychlor (50 percent powder) in 6 gallons of water; 8 pounds of methoxychlor (50 percent powder) in 100 gallons of water; 2 ounces (13 tablespoons) of rotenone (5 percent ground derris or cube root) in 6 gallons of water, or 2 pounds of rotenone (5 percent ground derris or cube root) in 100 gallons of water.

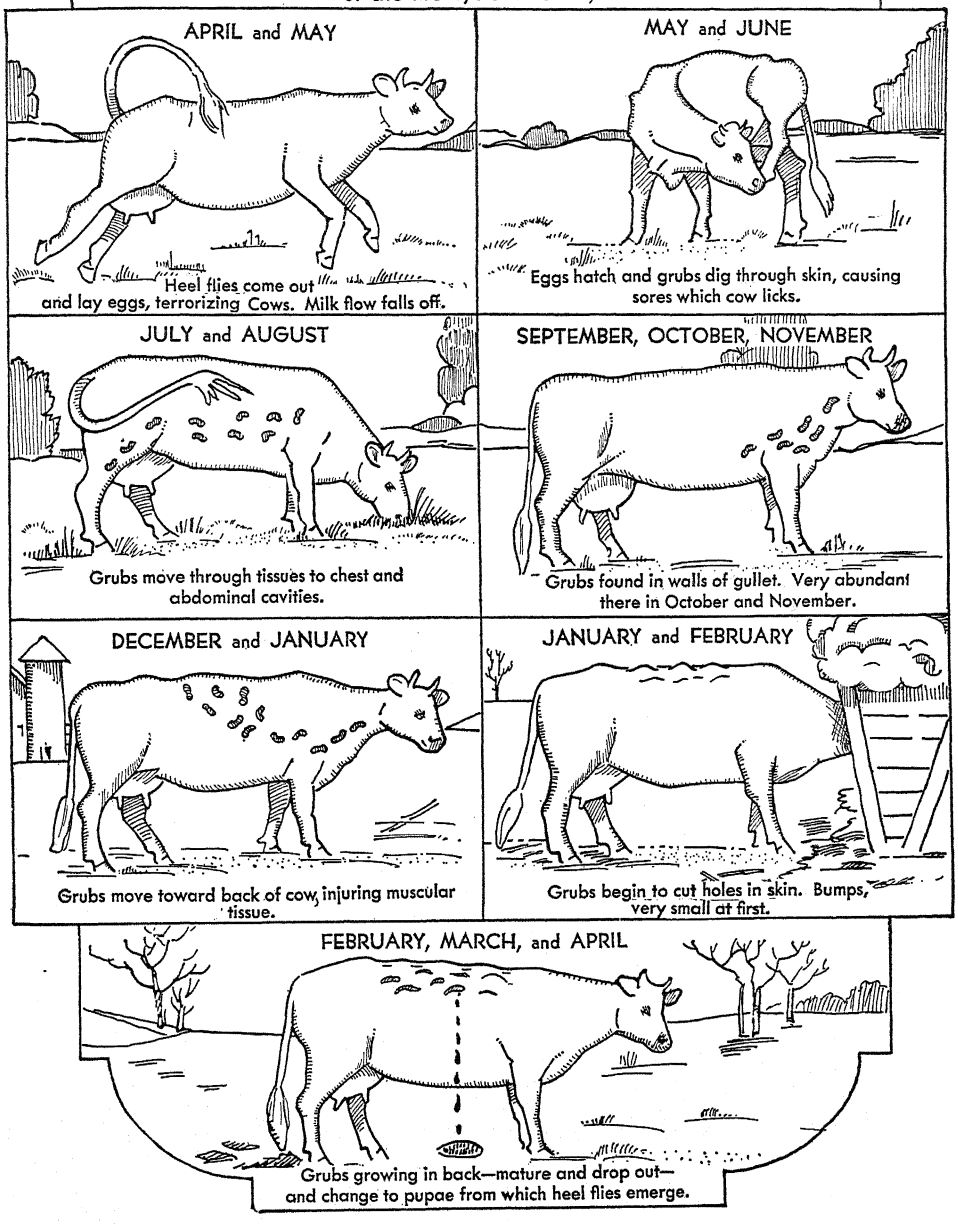
No other insecticide is recommended for use on *dairy* cattle in *milk* production. All parts of the body must be made wet with the spray by driving it forcibly into the hair of long-haired cattle. A hand or compressed-air sprayer is satisfactory for a few animals.

A commercial mixture of rotenone-sulfur *dust* is successful if rubbed well into the hair of the cow. Ten percent DDT dust or 0.5 percent DDT spray is satisfactory and safe on *beef* cattle.

Treating for cattle lice is as important as for cattle grubs, but differs in *methods used* and *timing* of the applications.

LIFE CYCLE OF THE CATTLE GRUB

(Approximate dates of the various stages of the life cycle in Ohio)



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